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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/599,651

07/13/2007

Eiju Suzuki

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EXAMINER

HUHN, RICHARD A

ART UNIT

PAPER NUMBER

1796

NOTIFICATION DATE

DELIVERY MODE

12/08/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/599,651	Applicant(s) SUZUKI ET AL.	
	Examiner RICHARD A. HUHN	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14, 18 and 21-26 is/are rejected.
- 7) ☒ Claim(s) 1, 13-17, 19 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Any rejections and/or objections made in the previous Office action and not repeated below are hereby withdrawn.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.
3. The grounds of rejection set forth below are the same as those set forth in the previous Office action mailed on 21 May 2009. For this reason, the present action is properly made final.

Claim Objections

4. Claims objected to because of the following informalities:
5. Claims 1, 13, 14, 15, and 19 recite "...it may include a hetero atom *unless* it does not have an active proton" [emphasis added]. It is noted that a similar objection was previously set forth regarding claims 1 and 19. Upon reconsideration of the language of the claim, it appears that the limitation is intended to *exclude* active protons from the R3 group of the initiator in the event that the R3 group includes a heteroatom. Therefore, it is suggested that the limitation read "...it may include a hetero atom *provided that* it does not have an active proton".
6. Claims 13 and 19 recite "M1 is ... an alkaline earth metal". For consistency with chemistry disclosed and the language of the other claims, it is suggested that the

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limitation read "M1 is ... an alkaline earth metal salt or an alkaline earth metal alkyl group".

7. Claim 15 refers to formulas (VI) and (VII). However, because claim 15 is an independent claim, formulas (VI) and (VII) are not incorporated into the claim from a base claim. Therefore, the claim should include the structures of formulas (VI) and (VII) and the corresponding definitions of the R- and Y-substituents.

8. Claims 17, 19, and 20 refer to formulas (VI), (VII), and (VIII). However, because claims 17, 19, and 20 are independent claims, formulas (VI), (VII), and (VIII) are not incorporated into the claims from any base claim. Therefore, the claims should include the structures of formulas (VI), (VII), and (VIII) and the corresponding definitions of the R- and Y-substituents.

9. Applicant's attention is drawn to MPEP 2173.05(s).

10. Claims 17 and 19 recite "A method of producing a modified conjugated diene polymer, characterized in that (i) **the** diamine compound of the formula (VI) is added with **the** silyl compound of the formula (VII) to form a silylated diamine compound of the formula (VIII); (ii) the silylated diamine compound is added with **the** organic alkali metal compound or the organic alkaline earth metal compound to form **the** polymerization initiator of the formula (V)..." [emphasis added].

11. Claim 20 recites "A method of producing a modified conjugated diene polymer, characterized in that (i) **the** diamine compound of the formula (VI) is added with **the** silyl

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compound of the formula (VII) to form a silylated diamine compound of the formula (VIII)..." [emphasis added].

12. These instances of the word "the" should be replaced with "a"/"an" to avoid a lack of antecedent basis.

13. Claim 20 further recites "the said solution" on the seventh line of the claim. The words "the" and "said" are not both necessary.

Double Patenting

14. Claims 1-8 and 10-12 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-15 of copending Application No. 11/908462.

15. This rejection was adequately set forth in paragraph 7 of the Office action mailed on 21 May 2009, and is incorporated here by reference.

Claim Rejections - 35 USC § 112

16. Claims 1-12, 14, 18, and 21-26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

17. This rejection was adequately set forth in paragraphs 14-19 of the Office action mailed on 21 May 2009, and is incorporated here by reference.

Response to Amendment

18. Applicant's amendment of the specification and of claims 1 and 19 to correct informalities is acknowledged. Applicant's amendment of claims 13-15 and 19 to recite definitions of the various R and Y-substitutents is acknowledged.

Response to Arguments

19. Applicant's arguments filed 19 August 2009 (herein "Remarks") have been fully considered and they are persuasive in part.

20. Regarding the objections to claims 1 and 19: Applicant's amendment of the claims overcomes the objections, and therefore the objections have been withdrawn.

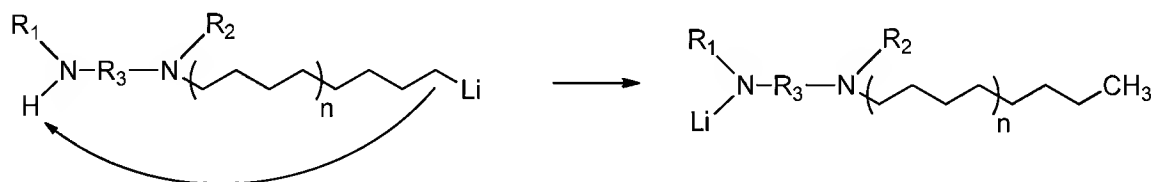
21. Regarding the double patenting rejection: Applicant argues (page 14 of Remarks) that because the present application is the earlier filed of the two applications, the rejection should be withdrawn if it is the only remaining grounds of rejection. Because there are presently other grounds of rejection being made, the double patenting rejection is maintained.

22. Regarding the rejection under 35 USC 112, first paragraph: Applicant argues (page 15 of Remarks) that the polymers in which the various R- and Y-substituents are

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hydrogen and in which Z1=an alkali metal, are enabled. Specifically, Applicant argues that the Si-N bond is rapidly hydrolyzed after polymerization stops. While the examiner does not contest this point, it is noted that the carbon-metal bond at the growing end of the polymer is far more reactive than the Si-N bond. Therefore, the carbon-metal bond will hydrolyze more rapidly than the Si-N bond, and therefore it is evident that the present disclosure does not enable one to produce a polymer according to the instant formulas in which R1, R2, or Y1 is hydrogen while Z1 is a metal.

23. Put another way, were a hydrogen to occur on one of the nitrogen atoms in the initiator, the hydrogen atom would be sufficiently acidic to be deprotonated by the carbanion that exists at the growing end of the polymer. Although it is the examiner's position that such a polymer cannot exist, a reaction is shown below to illustrate the reaction that would occur in the event that, *arguendo*, such an N-H bond were present:



24. Therefore it is evident that the present disclosure does not enable one to produce a polymer according to the instant formulas in which R1, R2, or Y1 is hydrogen while Z1 is a metal, and therefore the rejection of claims 1-12 and 21-26 has been maintained. Claims 13, 15-17, and 19-20 have been amended to exclude initiators having an N-H bond, and therefore the rejection of these claims has been withdrawn.

Allowable Subject Matter

25. The prior art fails to disclose or suggest the initiators recited in claims 13, 15-17, and 19-20. Therefore, claims 13, 15-17, and 19-20 would be allowable if written to overcome the objections set forth above, and if the double patenting rejection set forth above were properly overcome.

26. The following art is made of record:

27. *Eur. J. Inorg. Chem.* **2003**, 427-432 ("Meerendonk") discloses silylamine ligands for olefin polymerization catalysts. The ligands are η^3 -bound to titanium, rather than the presently recited single covalent bond to an alkali or alkaline earth metals, and the one of the nitrogen atoms lacks the presently recited R-groups. There is no suggestion in the prior art to use these ligands with a different coordination scheme, or with the presently recited metals, or with the presently recited monomers, and therefore Meerendonk does not bar an allowance for claims 13, 15-17, and 19-20.

28. *Eur. J. Inorg. Chem.* **2001**, 2337-2346 ("Gauvin") discloses bis(silylamine) ligands for olefin polymerization catalysts. The ligands have two covalent bonds with zirconium, rather than the presently recited single covalent bond to an alkali or alkaline earth metal. There is no suggestion in the prior art to use these ligands with a different coordination scheme, or with the presently recited metals, or with the presently recited monomers, and therefore Gauvin does not bar an allowance for claims 13, 15-17, and 19-20.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICHARD A. HUHNS whose telephone number is (571) 270-7345. The examiner can normally be reached on Monday to Friday, 9:30 AM to 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. A. H./
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/Vasu Jagannathan/

Supervisory Patent Examiner, Art Unit 1796